CLAIMS:

1. A method for optimizing machining conditions of an electric discharge machine that a work to be machined is subjected to electric discharge machining by use of a machining liquid, the method comprising:

a discharge voltage detecting step of detecting an average discharge voltage in a specified period of time at the time of electric discharge machining;

a discharge current computing step of determining a discharge current that makes a discharge voltage detected by the discharge voltage detecting step equal to a discharge voltage when an new machining liquid is used from the relationships between a discharge voltage when the new machining liquid is used, and volume resistivity and discharge current of the new machining liquid; and

an optimum machining condition computing step of determining discharging time, non-operating time, and a servo reference voltage, which depend on a discharge current determined by the discharge current computing step, from the relationships between a discharge current, discharging time, non-operating time, and a servo reference voltage that establish optimum machining conditions.

2. The method for optimizing machining conditions of an electric discharge machine according to claim 1, wherein the optimum machining condition computing step computes optimum

machining conditions from the following relational equations:

$$ON = A \times Ip - B$$

$$OFF = C \times EXP(D \times ON)$$

$$SV = E \times ON^{\wedge} - F$$

where ON is discharging time, OFF is non-operating time, SV is a servo reference voltage, Ip is a discharge current, and A to F are coefficients and their ranges of application are A = 7 to 10, B = 1.0 to 3.5, C = 25 to 35, D = 0.01 to 0.02, E = 200 to 250, and F = 0.2 t 0.4; and ^ represents power.